5. Please amend the first full paragraph on page 10 of the specification as follows:

The present apparatus for maximum work or system 30 (hereinafter apparatus 30) is shown diagrammatically or schematically in FIG. 1g, and FIGS. 1a-1f show enlarged views of FIG. 1g. The apparatus 30 comprises a three-pipe system 59 for providing hot or cold water to room spaces or zones 37, and duct work 39 for delivering supply air (SA) 38 to the room spaces or zones 37. The apparatus 30 is used year round for heating and cooling and uses the same pipes for the summer cycle of operation and winter cycle of operation. The apparatus 30 may be used in the governmental buildings, offices, institutional, commercial and industrial buildings, schools, labs, factories, manufacturing plants, hospitals, apartments, enclosed spaces, and other structures where individual spaces or zones 37 require heating or cooling. The apparatus 30 provides for year-round space conditioning for all zones 37 independent of outside temperatures, ambient conditions, internal conditions, or solar conditions. The apparatus 30 also provides for temperature, humidity, and ventilation control. Means for control 200, to be described presently, control the various pumps, valves, fan motor units, and other parts of the apparatus 30. Additionally, no changeover cycles are needed and no changeover equipment is required to satisfy building loads, internal loads, and/or solar loads.

6. Please amend the first full paragraph of the specification on page 11 as follows:

As shown in FIG. 1g, apparatus 30 comprises airside equipment 32 in an airside equipment room 33, central equipment 34 in a central equipment room 35, and roomside equipment 36 in rooms, spaces, or zones 37 to be conditioned. The apparatus for maximum work 30 comprises a refrigeration machine 40 located in the central equipment room 35. The refrigeration machine 40 provides a supply of hot and cold water to both the airside equipment 32 and to the roomside equipment 36. The airside equipment 32 works with the central equipment 34, in a manner to be described presently, so that supply air (SA) 38 exiting the airside equipment room 33, which is pumped through ducts 39 to the roomside zones or spaces 37, has about a 48° Fahrenheit dry bulb, wet bulb, and dew point temperature in the summer and winter, or in other words year round.

7. Please amend the first full paragraph on page 12 of the specification to amend as follows:

To do this, an outside thermostat designated T7 senses the outside air 41 conditions, that is the air's dry and wet bulb temperatures and relative humidity. This information is then transmitted to the cold water supply from evaporator thermostat designated T1 in FIG. 1g, and to the hot water supply thermostat designated T5 in FIG. 1g. FIGS. 2a and 2b comprise[[s]] a symbol list for the symbols used in FIG. 1. The hot water thermostat T5, upon receiving the signal, can then instruct the refrigeration machine 40 to "ramp up" if it is the winter and heat is needed. During "ramping up," shown in FIG. 3, the maximum water temperature available from the condenser may be about 120° Fahrenheit. But, by turning on a water heater or boiler 77, or other means for heating, the temperature of the hot water may be "ramped up" to about 140° Fahrenheit when the outside temperature is about 0° Fahrenheit, as shown in FIG. 3.

8. Please amend the first full paragraph on page 18 of the specification as follows:

Returning to the airside equipment room 33 during summer conditions, cold water from the evaporator 58 is pumped through the evaporator primary water loop 35A. Runout pipe 67 taps into the evaporator primary water loop 35A and delivers cold water to the modulating three way mixing valve 68 (designated V1 in FIG. 1g) by the airside pump 2, which is downstream of the modulating three way mixing valve 68. The cold water, which may be about 40° Fahrenheit since it is the summer, is pumped by the airside pump 2 through the two position three way diverting valve 160 (designated V4 in FIG. 1g) which is fully opened for the flow of cold water, and through an airside equipment coil 31. The airside equipment coil 31 comprises a sprayed cooling coil 69 (rows 1-4 of the airside equipment coil 31 as shown in FIG. 1g) and further comprises a reheat/recooling coil 69A (rows 5-8 of the airside equipment coil 31 as shown in FIG. 1g). In other embodiments, all of the coils described and shown herein may have fewer or more rows than shown in FIG. 1g.

9. Please amend the partial paragraph on the top of page 19 of the specification as follows:

source heat exchanger, designated HX-1 in FIG. 1g, does not have any water pumped through it, as heat does not need to be added to the airside equipment room 33. As will be described presently, HX-1 will come into play in connection with the description of winter mode of operation.

10. Please amend the first full paragraph on page 19 of the specification as follows

Continuing with the summer condition, the cold water flows through the sprayed cooling coil 69 in the sprayed cooling coil section 70, and it flows through the reheat/recooling coil 69A (rows 5-8 of the airside equipment coil 31) in the cooling coil section 71. As previously described, incoming outside air 41 first flows through the supply air coil 49A in the runaround coil section 48, then through the reheat/recooling coil 69A in the cooling coil section 71, and then through the sprayed cooling coil 69 in the sprayed cooling coil section 70, where the air is both cooled and brought to the desired wet bulb, dry bulb, and dew point temperature. The cooling coil spray pump 3 is a VFD pump and pumps water through pipe 73, which is at about 48° Fahrenheit, through one or more nozzles 72, and onto the sprayed cooling coil 69. The sprayed water drains down and collects in the tank 54 where the VFD cooling coil spray pump 3 is located. In particular, the incoming air is conditioned until it is at about a 48° Fahrenheit dry bulb, wet bulb, and dew point temperature, and has a relative humidity of 100%. To achieve this state, the airside supply air thermostat, designated T2 in FIG. 1g, is set at a 48° Fahrenheit dry bulb temperature and wet bulb temperature year round. This supply air (SA) 38 is then pumped though the ducts 39 to the roomside equipment 36.

11. Please amend the page 21 of the specification, last paragraph as follows:

In connection with the above and in a manner more fully described below, in the winter the airside supply air thermostat designated T2, the runaround thermostat designated T9 in FIG. 1g, the reheat/recooling coil thermostat designated T8, the variable frequency drive pump 9, and other components are controlled by the means for control 200 and operate in concert to deliver supply air at about a 48° Fahrenheit dry bulb and wet bulb temperature and a relative humidity of about 100%. This supply air 38 is moved through ducts 39 to the roomside spaces or zones 37.

12. Please amend the first paragraph on page 23 of the specification as follows:

supply/return pipe (HS/R) 62 is pumped by the hot water combination supply return pump 6 to the roomside equipment 36 through the hot supply/return piping loop 62. After being piped to the roomside equipment 36 the hot supply/return water is piped to a the hot storage tank 96 and pumped into the hot storage tank 96 by the hot water storage tank bypass pump 12. Here, the hot supply/return water is stored, and the hot water supply thermostat designated T6 in FIG. 1g senses the temperature of the hot water. When there is a need for heating the water in the hot storage tank 96 may be pumped into the condenser 56.

13. Please amend the first full paragraph on Page 23 of the specification as follows:

The cold supply pipe 64 taps into the evaporator primary loop 35A, and cold water is pumped by the cold water supply to roomside equipment pump 4 through the cold supply pipe 64 from the modulating three way mixing valve 102 (designated V2 in FIG. 1g). The roomside equipment pump 4 is a variable frequency drive pump (VFD) controlled by the discharge pressure controller designated P in FIG. 1g. One port of the modulating three way mixing valve 102 connects to the cold supply pipe 64. The cold supply water being delivered may be about 40°-48° Fahrenheit in the summer and about 52° Fahrenheit in the winter. The other port connects to a pipe 103A that connects to the cold return pipe 66. The pipe 103A delivers water at about 64° Fahrenheit to the modulating three way mixing valve 102 in the summer months.

14. Please amend the first full paragraph on page 24 of the specification as follows:

After passing through the modulating three way mixing valve 102, the cold water is pumped through the roomside cold water loop 103 by the cold water supply to roomside loop pump 4. As shown in FIG. 1g, the system expansion tank 104 allows for expansion and contraction of the hot and cold water in the hot supply/return pipe 62 and cold supply pipe 64. Additionally, a balancing valve 101 is provided at the end of the cold supply (CS) pipe 64. The purpose of the balancing valve is to bleed, for example 1% of the cold water flow through cold supply pipe (CS) 64, so that the water in the cold supply pipe (CS) 64, which will slowly absorb heat from its surroundings, is constantly replenished with cold supply water.

15. Please amend the first full paragraphs on page 25 of the specification as follows:

As shown in FIG. 1*g*, each induction unit 98, radiant ceiling 99, and fan coil unit 100 works with an identical water blending circuit 120. Each induction unit 98, radiant ceiling unit 99, and fan coil unit 100 also has a ventilation duct 39 connected to the airside equipment room 33, the duct 39 for delivering supply air 38 to the zone or roomspace 37. The ducts 39 are equipped with two-position dampers 39A to regulate air flow.

16. Please amend the second full paragraph on page 25 of the specification as follows:

The water blending circuits 120 used with the induction unit 98, the radiant ceiling 99, and the fan coil unit 100 are the same. Common reference numbers are used throughout the description of the water blending circuits 120. A cold supply runout pipe 128 connects to the cold supply pipe 64. A cold return runout pipe 130 connects to the cold return pipe 66. A hot supply runout pipe 132 and hot return runout pipe 134 connect to the hot supply/return pipe 62, as shown in FIG. 1g.

17. Please amend the last paragraph on page 25 as follows:

The cold supply runout 128 and hot supply runout 132 connect to the two ports of an upstream two position three way changeover valve 136 (designated V3 in FIG. 1g), that allows either hot or cold water to flow to there-through and to the modulating three way zone

18. Please amend the first full paragraph on page 26 of the specification as follows:

The roomside zones or spaces 37 comprise a roomside zone thermostat designated TZ in FIG. 1. The roomside zone thermostat TZ is for sensing the temperature of the air in the room space or zone 37. The other thermostat is a roomside fluid return thermostat designated TR in FIG. 1g, which senses the temperature of the coil return water that is returning from the roomside equipment coil 138. Electronic signals are sent from the roomside zone thermostat TZ indicating what the room temperature is to be maintained or if a change in room temperature is needed (heating or cooling).

19. Please amend the second full paragraph on page 30 of the specification as follows:

The water blending circuit 120 is the same for the induction unit 98. As shown, the supply air 38 passes through damper 39A and flows out of the duct 39. In the process the incoming supply air 39 air stream draws room air through the coil 138. The room air is thus heated or cooled. The air is blown into the zone or room 37 and passes through the vents 106. As shown in FIG. 1g, the room may be embodied so that the induction unit 98 is arranged horizontally or vertically therein.

20. Please amend the third full paragraph on page 30 of the specification as follows:

Although FIG. 1g shows a single induction unit 98, a single radiant coil unit 99, and a single fan coil unit 100, the zoning arrangement may be embodied so that a group of induction units 98, radiant coil units 99, and/or fan coils 100 be utilized in a single air conditioned zone.

21. Please amend the first paragraph on page 31 of the specification as follows:

through the roomside equipment 36, is piped to the cold water storage tank 97 through the cold return pipe 66 into the cold water storage tank 97 by the cold water storage bypass pump 5. The cold water thermostat designated T4 in FIG. 1g senses the temperature of the cold water in the tank 97. When there is a need for extra or quick cooling of the cold supply water (CS), the cold water in the storage tank 97 is pumped to the evaporator 58 by the cold water storage bypass pump 5. Hence the stored cold water may be used when cooling demands rise. Such use of a cold water storage tank 97 may allow a smaller refrigeration machine 40 to be used in a particular application. A feasibility study may be generated to determine cold water storage tank 97 size and refrigeration machine 40 size for optimum cost and optimal energy efficiency and consumption. This feasibility study also comprises such factors as cooling/heating duty required, energy cost (demand and use charges, time of day rates etc.) and any space constraints associated with the hot and cold storage tanks 96,97, respectively. Feasibility studies and the manner of carrying out such studies are well known to those having ordinary skill in the art.

22. Please amend page 31 of the specification as follows. In particular, please amend the heading, which was underlined in the original application, and please amend the first full paragraph following the heading.

~~FIG. 4 A Graphical Representation of: the Design Conditions, the Airside Conditions in the Winter Cycle and Summer Cycle, and the Roomside Conditions~~

FIGS. 4a, 4b, and 4c - A Graphical Representation of: the Design Conditions, the Airside Conditions in the Winter Cycle and Summer Cycle, and the Roomside Conditions

FIGS. 4a and 4b show a graphical representation of the summer and winter cycles and the airside and roomside conditions, and FIG. 4c shows FIGS 4a and 4b as one figure. FIG. 4c is viewed in connection with the above description, and shows a graphical representation of dewpoint temperature (ordinate) in degrees Fahrenheit plotted against the outside air temperature in degrees

23. Please amend the first full paragraph on page 32 of the specification as follows:

The graph shown in FIG. 4c illustrates an embodiment of the operation of the apparatus 30 at the following design parameters for the winter and summer. In particular, in the winter the design conditions are for a 0° Fahrenheit dry bulb temperature and about a -1° Fahrenheit wet bulb temperature, and humidity ratio of 3.4 grains/pound of dry air (point a in FIG. 4c). The summer design conditions are for a 95° Fahrenheit dry bulb temperature, a 75° Fahrenheit wet bulb temperature, and a humidity ratio of about 100 grains/pound of dry air (point i in FIG. 4). In this embodiment, the design is for a maximum occupancy load of seven (7) people/1000 square feet, and outdoor air ventilation of 20 cubic feet a minute/person. The indoor design conditions for the zones or spaces 37 are for a 75° Fahrenheit dry bulb temperature and about 30% to 45% relative humidity year round. These design conditions are suitable for offices. However, in other embodiments of the apparatus for maximum work 30, these design parameters may be readily changed to satisfy the particular needs of hospitals, schools, laboratories, factories, and other enclosed spaces or zones 37.

24. Please amend the last paragraph on page 32 of the specification as follows:

1. As shown in the graph of FIG. 4c, in the winter cycle there is both heating and humidification of the incoming outside air 41. The outside air 41 temperature may be between about 0° Fahrenheit to about 48°

25. Please amend the last full paragraph on page 33 as follows:

Also, in the winter cycle the air exits the reheat/recooling coil 69A at about 75° Fahrenheit shown in FIG. 4c by line a, b, d. This warm air needs be humidified, and this is accomplished by the winter humidification cycle. This is shown as the area under the adiabatic saturation curve in FIG. 4c (curve d-e). Point e shows the supply air (SA) 38 leaving the airside equipment at a 48° Fahrenheit dry bulb temperature, wet bulb temperature, and dew point temperature. Continuing

26. Please amend the first paragraph on page 34 of the specification as follows:

with FIG. 4c, point e^1 shows the supply air (SA) 38 that is distributed to the zones or spaces 37. As shown, the air is at about 52° Fahrenheit dry bulb temperature and a 48° Fahrenheit wet bulb temperature. The 4° Fahrenheit heat gain is due to heat gain as the supply air 38 air moves through the ducts 39. The apparatus for maximum work 30 is able to condition air so that ultimately the air in the unoccupied roomspaces or zones 37 (point f) has a 75° dry bulb temperature and 30% relative humidity in the winter months, as shown in FIG. 4c.

27. Please amend the second full paragraph on page 35 as follows:

Additionally, cooling and dehumidification is carried out using the same pipes used for the winter heating cycle. During the summer condition, the design may be for outside air 41 at a 95° Fahrenheit dry bulb temperature and a 75° Fahrenheit wet bulb temperature as shown by point i in FIG. 4c. Curve i-e shows the outside air cooling to 48° Fahrenheit as it is cooled by the apparatus for maximum work 30. The air is conditioned by the apparatus 30 until the condition of the air in the roomspaces or zones 37 (point f) of the unoccupied room or zone 37 is 75° dry bulb temperature and 30% relative humidity in the summer months.

28. Please amend the last paragraph on page 35 of the specification as follows:

Thus, as shown in FIG. 4c, in either the summer or winter condition, the incoming outside air 41 is conditioned into supply air 38 and is brought to about a

29. Please amend the first full paragraph on page 36 of the specification as follows:

Continuing with FIG. 4c, reference point h indicates the entering water temperature to the roomside coil 138. The water temperature is about 2° Fahrenheit above the room dew point temperature of the air in the room or zone 37. As described above, because the temperature of the water in the roomside coils 138 is above the dew point temperature, all the roomside zone or room 37 cooling for the apparatus 30 is accomplished with dry roomside coils 138. Under normal operating conditions, this does away with the need to handle condensate water on the coils 138, as there is none, and does away with the need for messy condensate drain pans, and does away with the need for a condensate drainage system.

30. Please amend the last full paragraph on page 37 of the specification as follows:

In the event all heating needs are met, useful heat energy is salvaged by a means for salvaging energy 93. As shown in FIG. 1g, hot supply/return water (HS/R) 62 is piped through salvage energy heat exchanger designated HX-2 in FIG. 1g. The hot supply/return water in the pipe 62 is pumped through the salvage energy heat exchanger HX-2 by the salvage energy heat exchanger bypass pump 10. The salvage piping loop 95 passes

31. Please amend the first full paragraph on page 38 of the specification as follows:

The refrigeration machine 40 may also be used to remove excess heat from the apparatus for maximum work 30. This may be done after all other heating needs are satisfied. As shown in FIG. 1g, the hot supply/return pipe (HS/R) 62 leading back to the condenser 56 comprises a hot water evaporative cooler loop 80 that passes through the hot water evaporative cooler heat exchanger designated HX-3 in FIG. 1g. As shown, a hot water evaporative cooler pump 13 or HX-3 bypass pump pumps hot water through the evaporative cooler heat exchanger HX-3 and back to the hot supply/return pipe 62. The hot water evaporative cooler loop 82 passes through HX-3, and the water held therein is pumped by the evaporative cooler loop pump 14. Ethylene glycol may also be pumped through the evaporative cooler loop 82. As the evaporative cooler pump 13 and hot water evaporative cooler pump 14 pump, heat from the apparatus 30 is removed through the evaporative cooler section 83.